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09/844,275	04/30/2001	Shouzou Ashizawa	Q64296	9986

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EXAMINER	
DHARIA, PRABODH M	
ART UNIT	**PAPER NUMBER**
2673	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/844,275	Applicant(s) ASHIZAWA ET AL.	
	Examiner Prabodh M Dharia	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because total word count exceeds 150.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v.*

HydReclaim Corp., 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "the other electrode of the first AC power supply being connected to a ground potential point;" in claim 1 is used by the claim to mean "there is a direct connection to other end of electrode to ground potential point", while the accepted meaning is "However, none of the circuit drawings concurs the claim, instead it shows connection to ground potential point controlled by switch or through control circuit" The term is indefinite because the specification does not clearly redefine the term.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-7, 9-12,14-29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka (4,208,869).

Regarding Claim 1, Hanaoka teaches an EL device driving device comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first EL driving IC (Col. 13, Lines 37-45) having a first output terminal connected to one electrode of the EL device (Col. 11, Lines 43-51), a first input terminal (Col. 11, Lines 51-56), and a first controller for turning on or off an alternating current flowing between the first output terminal and the first input terminal (Col. 16, Lines 24-37); a second EL driving IC (Col. 13, Lines 37-45) having a second output terminal

connected to the other electrode of the EL device (Col. 11, Lines 43-51), a second input terminal (Col. 11, Lines 51-56), and a second controller for turning on or off an alternating current flowing between the second output terminal and the second input terminal (Col. 16, Lines 24-37); a first AC power supply for supplying an AC voltage (figure 3, Col. 4, Lines 36-45), one electrode of the first AC power supply being connected to the first input terminal (Col. 11, Lines 43-56, Col. 17, Lines 45-51), and the other electrode of the first AC power supply being connected to a ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57); and a second AC power supply for supplying an AC voltage having the same waveform (DC wave form generated by a DC source supplies inverter circuit to generate AC signal.) (Col. 11, Lines 43-47) as the AC voltage supplied from the first AC supply (Col. 11, Lines 43-56, Col. 17, Lines 45-51), and one electrode of the second AC power supply being connected to the second input terminal, End the other electrode of the second AC power supply being connected to the ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57).

However, Hanaoka fails to teach specifically shifted in phase 180 degrees.

However, Hanaoka teaches the DC signal supplied to inverter for converting AC are complementary signals (Col. 11, Lines 43-56). Since the AC signals generated by same DC source for both electrodes are complementary signals it is well known to one in the ordinary skill in the art, that signals are 180 degrees apart since generally a single cycle represents 360 degrees.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of 180 degrees out of phase signal in Hanaoka teaching for improvements in illumination devices for an electro-optic display device.

Regarding Claim 2, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 50V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 3, Hanaoka teaches an EL device driving device comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first EL driving IC (Col. 13 Lines 37-45) having a first output terminal connected to one electrode of the EL device (Col. 11, Lines 43-51), a first input terminal (Col. 11, Lines 51-56), and a first controller for turning on or off an alternating current flowing between the first output terminal and the first input terminal (Col. 16, Lines 24-37); a second EL driving IC (Col. 13 Lines 37-45) having a second output terminal connected to the other electrode of the EL device (Col. 11, Lines 43-51), a second input terminal (Col. 11, Lines 51-56), and a second controller for turning on or off an alternating current flowing between the second output terminal and the second input terminal (Col. 16, Lines 24-37).

Regarding Claim 4, teaches the first EL driving IC (Col. 13 Lines 37-45) includes an output transistor having one electrode connected to the first output and the other electrode connected to the first input terminal (Col. 11, lines 43-56), and a diode connected in parallel to the output transistor (Col. 11, lines 34-42), and the second EL driving IC (Col. 13 Lines 37-45) includes an output transistor having one electrode connected to the second output terminal and

the other electrode connected to the second input terminal of the second EL driving IC (Col. 13 Lines 37-45), and a diode connected in parallel to the output transistor (Col. 11, lines 34-42).

Regarding Claim 5, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13 Lines 30-45).

Regarding Claim 6, Hanaoka teaches an EL device driving device comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first EL driving IC (Col. 13 Lines 37-45) having a first output terminal connected to one electrode of the EL device (Col. 11, Lines 43-51), a first input terminal (Col. 11, Lines 51-56), and a first controller for turning on or off an alternating current flowing between the first output terminal and the first input terminal (Col. 16, Lines 24-37); a second EL driving IC (Col. 13 Lines 37-45) having a second output terminal connected to the other electrode of the EL device (Col. 11, Lines 43-51), a second input terminal (Col. 11, Lines 51-56), and a second controller for turning on or off an alternating current flowing between the second output terminal and the second input terminal (Col. 16, Lines 24-37); a first AC power supply for supplying an AC voltage (figure 3, Col. 4, Lines 36-45), one electrode of the first AC power supply being connected to the first input terminal (Col. 11, Lines 43-56, Col. 17, Lines 45-51), and the other electrode of the first AC power supply being connected to a ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57); and a second AC power supply for supplying an AC voltage having the same waveform (DC wave form generated by a DC source supplies inverter circuit to generate AC signal for both the AC power supplier) (Col. 11, Lines 43-47) as the AC voltage supplied from the first AC supply (Col. 11,

Lines 43-56, Col. 17, Lines 45-51), and one electrode of the second AC power supply being connected to the second input terminal, End the other electrode of the second AC power supply being connected to the ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57).

However, Hanaoka fails to teach specifically shifted in phase 180 degrees.

However, Hanaoka teaches the DC signal supplied to inverter for converting AC are complementary signals (Col. 11, Lines 43-56). Since the AC signals generated by same DC source for both electrodes are complementary signals it is well known to one in the ordinary skill in the art, that signals are 180 degrees apart since generally a single cycle represents 360 degrees.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of 180 degrees out of phase signal in Hanaoka teaching for improvements in illumination devices for an electro-optic display device.

Regarding Claim 7, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 50V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 9, Hanaoka teaches the EL driving IC (Col. 13, Lines 37-45) includes an output transistor having one electrode connected to the output terminal (Col. 11, Lines 43-56) of the EL driving IC (Col. 13, Lines 37-45) and the other electrode connected to the input terminal of the EL driving IC (Col. 13, Lines 37-45), and a diode connected in parallel to the output transistor (Col. 11, Lines 34-42).

Regarding Claim 10, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13, Lines 30-45).

Regarding Claim 11, Hanaoka teaches an EL driving device (Col. 4, Lines 36-38) comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first EL driving IC (Col. 13, Lines 37-45) having an output terminal connected to one electrode of the EL device (Col. 11, Lines 43-51), an input terminal (Col. 11, Lines 51-56), and a first controller for turning on or off an alternating current flowing between the first output terminal and the first input terminal (Col. 16, Lines 24-37); an input terminal connected to a around potential point, (Col. 11, Lines 43-56, Col. 17, Lines 51-57) and an AC power supply for supplying an AC voltage without superposition of direct current (Col. 8, Lines 49-60), one electrode of the AC power supply being connected to the other electrode of the EL device, and the other electrode of the AC power supply being connected to the ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57).

Regarding Claim 12, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 100V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 14, Hanaoka teaches the EL driving IC (Col. 13, Lines 37-45) includes an output transistor having one electrode connected to the output terminal (Col. 11, Lines 43-56)

of the EL driving IC (Col. 13, Lines 37-45) and the other electrode connected to the input terminal of the EL driving IC (Col. 13, Lines 37-45), and a diode connected in parallel to the output transistor (Col. 11, Lines 34-42).

Regarding Claim 15, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13 Lines 30-45).

Regarding Claim 16, Hanaoka teaches an EL driving device (Col. 4, Lines 36-38) comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); an AC power supply for supplying an AC voltage, one electrode of the AC power supply being connected to one electrode of the EL device, and the other electrode of the AC power supply being connected to a ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57); a first energizing circuit for energizing a first diode connected to the other electrode of the EL device to pass current in a direction from the EL device to the AC power supply (Col. 15, Lines 41-62); a second energizing circuit for energizing a second diode connected to the other electrode of the EL device to pass current in a direction from the AC power supply to the EL device (Col. 15, Line 62 to Col. 16, Line 17); and an energizing control circuit for turning on or off the first and second energizing circuits in synchronism with a positive or negative change in the AC voltage supplied from the AC power supply ((Col. 4, Lines 36-41 (AC inverter circuitry), Col. 13, Lines 5-20, Col. 15, Line 41 to Col. 16, Line 17), Col. 15, Lines 41-56, Col. 16, Lines 38-45).

Regarding Claim 17, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 100V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 19, Hanaoka teaches one electrode of the first diode is connected to the other electrode of the EL device; the first energizing circuit enables the other electrode of the first diode to be at the ground potential when the first energizing circuit is turned on; one electrode of the second diode is connected to the other electrode of the EL device; and the other electrode of the second diode is connected to the ground potential point (Col. 15, Lines 41-56, Col. 16, Lines 38-45).

Regarding Claim 20, Hanaoka teaches the energizing control circuit turns on the first energizing circuit, and turns off the second energizing circuit, when the AV Voltage supplied from the AC power supply is at a negative potential, and the energizing control circuit turns off the first energizing circuit, and turns on the second energizing circuit, when the AC voltage supplied from the AC power supply is at a positive potential (Col. 4, Lines 36-41 (AC inverter circuitry), Col. 13, Lines 5-20, Col. 15, Line 41 to Col. 16, Line 17).

Regarding Claim 21, Hanaoka teaches an EL driving device (Col. 4, Lines 36-38) comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first energizing circuit for energizing a first diode connected to the other electrode of the EL device to pass current in a direction from the EL device to the AC power supply (Col. 15, Lines 41-62) within a

first EL driving IC (Col. 13 Lines 37-45); a second energizing circuit for energizing a second diode connected to the other electrode of the EL device to pass current in a direction from the AC power supply to the EL device (Col. 15, Line 62 to Col. 16, Line 17) within a first EL driving IC (Col. 13 Lines 37-45); and when the AC voltage supplied from the first AC power supply is higher than the AC voltage supplied from the second AC power supply (Col. 8, Lines 32-36) with the same waveform as the AC voltage supplied from the first AC power supply (DC wave form generated by a DC source supplies inverter circuit to generate AC signal for both the AC power supplier) (Col. 11, Lines 43-47) and an energizing control circuit for turning on or off the first and second energizing circuits in synchronism with a positive or negative change in the AC voltage supplied from the AC power supply (Col. 4, Lines 36-41 (AC inverter circuitry), Col. 13, Lines 5-20, Col. 15, Line 41 to Col. 16, Line 17), Col. 15, Lines 41-56, Col. 16, Lines 38-45). and passing a current from the second AC power supply to the other electrode of the EL device through a diode connected in parallel to the output transistor (Col. 15, Lines 41-62) within the second EL driving IC (Col. 13 Lines 37-45), and from one electrode of the EL device to the first AC power supply device through the output transistor in the on state connected in parallel to the diode (Col. 15, Line 62 to Col. 16, Line 17) within the first EL driving IC (Col. 13 Lines 37-45), when the AC voltage supplied from the first AC power supply is lower than the AC voltage supplied from the second AC power supply (the high AC voltage is not applied to the EL electrodes as the switch is off and EL is in t6he discharge mode, Col. 15, Line 57 to Col. 16, Line 1).

However, Hanaoka fails to teach specifically shifted in phase 180 degrees.

However, Hanaoka teaches the DC signal supplied to inverter for converting AC are complementary signals (Col. 11, Lines 43-56). Since the AC signals generated by same DC source for both electrodes are complementary signals it is well known to one in the ordinary skill in the art, that signals are 180 degrees apart since generally a single cycle represents 360 degrees.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of 180 degrees out of phase signal in Hanaoka teaching for improvements in illumination devices for an electro-optic display device.

Regarding Claim 22, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 50V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 23, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13 Lines 30-45).

Regarding Claim 24, Hanaoka teaches an EL driving device (Col. 4, Lines 36-38) comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); a first energizing circuit for energizing a first diode connected to the other electrode of the EL device to pass current in a direction from the EL device to the AC power supply (Col. 15, Lines 41-62) within a first EL driving IC (Col. 13 Lines 37-45); a second energizing circuit for energizing a second diode connected to the other electrode of the EL device to pass current in a direction from the

AC power supply to the EL device (Col. 15, Line 62 to Col. 16, Line 17) within a first EL driving IC (Col. 13 Lines 37-45); and when the AC voltage supplied from the first AC power supply is higher than the AC voltage supplied from the second AC power supply (Col. 8, Lines 32-36) with the same waveform as the AC voltage supplied from the first AC power supply (DC wave form generated by a DC source supplies inverter circuit to generate AC signal for both the AC power supplier) (Col. 11, Lines 43-47) and an energizing control circuit for turning on or off the first and second energizing circuits in synchronism with a positive or negative change in the AC voltage supplied from the AC power supply (Col. 4, Lines 36-41 (AC inverter circuitry), Col. 13, Lines 5-20, Col. 15, Line 41 to Col. 16, Line 17), Col. 15, Lines 41-56, Col. 16, Lines 38-45). and passing a current from the second AC power supply to the other electrode of the EL device through a diode connected in parallel to the output transistor (Col. 15, Lines 41-62) within the second EL driving IC (Col. 13 Lines 37-45), and from one electrode of the EL device to the first AC power supply device through the output transistor in the on state connected in parallel to the diode (Col. 15, Line 62 to Col. 16, Line 17) within the first EL driving IC (Col. 13 Lines 37-45), when the AC voltage supplied from the first AC power supply is lower than the AC voltage supplied from the second AC power supply (the high AC voltage is not applied to the EL electrodes as the switch is off and EL is in t6he discharge mode, Col. 15, Line 57 to Col. 16, Line 1).

However, Hanaoka fails to teach specifically shifted in phase 180 degrees.

However, Hanaoka teaches the DC signal supplied to inverter for converting AC are complementary signals (Col. 11, Lines 43-56). Since the AC signals generated by same DC

source for both electrodes are complementary signals it is well known to one in the ordinary skill in the art, that signals are 180 degrees apart since generally a single cycle represents 360 degrees.

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of 180 degrees out of phase signal in Hanaoka teaching for improvements in illumination devices for an electro-optic display device.

Regarding Claim 25, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 50V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 26, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13 Lines 30-45).

Regarding Claim 27, Hanaoka teaches an EL driving device (Col. 4, Lines 36-38) comprising: an EL device having two electrodes (figure 6, Col. 5, Lines 37-45); an AC power supply for supplying an AC voltage, one electrode of the AC power supply being connected to one electrode of the EL device, and the other electrode of the AC power supply being connected to a ground potential point (Col. 11, Lines 43-56, Col. 17, Lines 51-57); through an output transistor in the on state (Col. 15, Line 62 to Col. 16, Line 1) within an EL driving IC (Col. 13 Lines 37-45), when the AC voltage without superposition of direct current supplied from the AC power supply is higher than a ground potential (Col. 13, Lines 5-20); and passing a current from

the ground potential point to the other electrode of the EL device through a diode connected in parallel to the output transistor in the on state (Col. 15, Lines 41-62) within the EL driving IC (Col. 13 Lines 37-45),, and from one electrode of the EL device to the AC power supply, when the AC voltage supplied from the AC power supply is lower than the ground potential (the high AC voltage is not applied to the EL electrodes as the switch is off and EL is in t6he discharge mode, Col. 15, Line 57 to Col. 16, Line 1).

Regarding Claim 28, Hanaoka teaches the amplitude of the AC voltage supplied (could be as high as 150V and frequency of a good EL display not larger than 1 Khz achieved) from the first AC power supply and the second AC power supply is 100V and its frequency is 400Hz (Col. 5, Lines 59-64, figure 15, Col. 9, Lines 49-56, Col. 10, Lines 62-67).

Regarding Claim 29, Hanaoka teaches the output transistor is a bipolar transistor or a field effect transistor (Col. 13 Lines 30-45).

8. Claim rejected under 35 U.S.C. 103(a) as being unpatentable over Hanaoka (4,208,869) in view of Skeki et al. ((JP 2000-047638).

Regarding Claim 8, Hanaoka teaches the plurality of EL devices are provided (Col. 3, Lines 3-7); the EL driving IC (Col. 3, Lines 3-7).

However, Hanaoka fails to teach the plurality of output terminals and the plurality of controllers for turning on or off the alternating current corresponding to the plurality of EL

devices respectively; the plurality of output terminals for the EL driving circuitries are connected to one electrodes of the plurality of EL devices respectively; the one electrode for the first AC power supply is connected to the other electrodes of the plurality of EL device; the controllers are configured to turn on or off the alternating current flowing between each of the plurality of output terminals and the input terminal.

Sukeki et al. teaches the plurality of output terminals (pages 4,5, paragraph 30) and the plurality of controllers for turning on or off the alternating current corresponding to the plurality of EL devices respectively (page 2, paragraphs 8,9,10); the plurality of output terminals for the EL driving circuitries are connected to one electrodes of the plurality of EL devices respectively (pages 1,2 paragraphs 6-10); the one electrode for the first AC power supply is connected to the other electrodes of the plurality of EL devices (page 2, paragraphs 8,9,10); the controllers are configured to turn on or off the alternating current flowing between each of the plurality of output terminals and the input terminal (page 2, paragraphs 8,9,10).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate teaching of Sukeki et al. in Hanaoka teaching for improvements in illumination devices for an electro-optic display device.

Regarding Claim 13, Hanaoka teaches the plurality of EL devices are provided (Col. 3, Lines 3-7); the EL driving IC (Col. 3, Lines 3-7).
Sukeki teaches the plurality of output terminals (pages 4,5, paragraph 30) and the plurality of controllers for turning on or off the alternating current corresponding to the plurality of EL devices respectively (page 2, paragraphs 8,9,10); the plurality of output terminals for the EL

driving circuitries are connected to one electrodes of the plurality of EL devices respectively (pages 1,2 paragraphs 6-10); the one electrode for the first AC power supply is connected to the other electrodes of the plurality of EL devices (page 2, paragraphs 8,9,10); the controllers are configured to turn on or off the alternating current flowing between each of the plurality of output terminals and the input terminal (page 2, paragraphs 8,9,10).

Regarding Claim 18, Hanaoka teaches the plurality of EL devices are provided (Col. 3, Lines 3-7); the EL driving IC (Col. 3, Lines 3-7).

Sukeki teaches the plurality of output terminals (pages 4,5, paragraph 30) and the plurality of controllers for turning on or off the alternating current corresponding to the plurality of EL devices respectively (page 2, paragraphs 8,9,10); the plurality of output terminals for the EL driving circuitries are connected to one electrodes of the plurality of EL devices respectively (pages 1,2 paragraphs 6-10); the one electrode for the first AC power supply is connected to the other electrodes of the plurality of EL devices (page 2, paragraphs 8,9,10); the controllers are configured to turn on or off the alternating current flowing between each of the plurality of output terminals and the input terminal (page 2, paragraphs 8,9,10).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is informed that all of the other additional cited references render the claims obvious.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamazaki (6,522,319 B1) Electro-Optical device and method for driving the same, Liquid Crystal Device and Method for driving the same circuit for driving Electro-Optical device, and Electronic Device.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 703-605-1231. The examiner can normally be reached on M-F 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-3054938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9341 for regular communications and 703-872-9341 for After Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

PD

AU2673

July 10, 2003

VIJAY SHANKAR
PRIMARY EXAMINER